

Attorney Docket No.: KUZ-0018
Inventors: Yasukochi et al.
Serial No.: 10/502,412
Filing Date: July 23, 2004
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This listing of the claims will replace all prior versions and listings of claims in the application:

Listing of the claims:

Claim 1-4 (canceled)

Claim 5 (previously presented): The production process according to Claim 27 or 28, wherein the crosslinking functional group is a hydroxyl group, and the crosslinking agent is boric acid.

Claim 6 (canceled)

Claim 7 (previously presented): A medical patch comprising a pressure-sensitive adhesive shaped product produced by the process according to Claim 27 or 28.

Claim 8-9 (canceled)

Claim 10 (previously presented): The production process according to claim 27, wherein the crosslinking is carried out at 60°C to 150°C.

Claim 11 (previously presented): The production process according to claim 10, wherein the crosslinking is carried out at 100°C to 150°C.

Claim 12 (previously presented): The production process according to claim 27, wherein the crosslinking is carried out for approximately 15 minutes to one hour.

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Claims 13-15 (canceled)

Claim 16 (previously presented): The production process according to claim 27 or 28, wherein the crosslinkable monomer unit is selected from hydroxyl group-containing acrylate monomers and hydroxyl-group containing methacrylate monomers.

Claim 17 (previously presented): The production process according to claim 16 wherein the hydroxyl group-containing acrylate monomer is selected from 2-hydroxyethyl acrylate, 3-hydroxypropyl acrylate and 4-hydroxybutyl acrylate.

Claim 18 (previously presented): The production process according to claim 16 wherein the hydroxyl group-containing methacrylate monomer is selected from 2-hydroxyethyl methacrylate, 3-hydroxypropyl methacrylate and 4-hydroxybutyl methacrylate.

Claims 19-20 (canceled)

Claim 21 (previously presented): The production process according to claim 28 wherein the crosslinking is carried out at 60°C to 150°C.

Claim 22 (previously presented): The production process according to claim 21 wherein the crosslinking is carried out at 100°C to 150°C.

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Claim 23 (previously presented): The production process according to claim 28 wherein the crosslinking is carried out for approximately 15 minutes to one hour.

Claim 24-26 (canceled)

Claim 27 (currently amended): A process for the production of a medical patch, said process comprising:

(a) dissolving in a lower alcohol:

(i) one or more drugs; and

(ii) an acrylic copolymer or a methacrylic copolymer comprising one or more crosslinkable acrylic or methacrylic monomer units having at least one hydroxyl group and/or carboxyl group and one or more other monomer units containing at least 2-ethylhexyl acrylate and/or vinylpyrrolidone;

(b) adding to the solution of step (a) one or more crosslinking agents selected from the group consisting of metal alcoholates, boric acid, borate and borate ester, wherein the crosslinking reaction is substantially suppressed by the lower alcohol;

(c) spreading the mixture of step (b) on a film; and

(d) thermally removing the lower alcohol and thereby crosslinking the polymer of (ii) with the one or more crosslinking agents of step (b) either simultaneously with or followed by laminating to a support, collectively thereby to form the medical patch.

Claim 28 (currently amended): A process for the production of a medical patch, said process comprising:

(a) dissolving in a solvent:

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(i) one or more drugs; and
(ii) an acrylic copolymer or a methacrylic copolymer having one or more crosslinkable acrylic or methacrylic monomer units having at least one hydroxyl group and/or carboxyl group and one or more other monomer units containing at least 2-ethylhexyl acrylate and/or vinylpyrrolidone;

(b) adding to the solution of step (a) one or more crosslinking agents selected from the group consisting of metal alcoholates, boric acid, borate and borate ester dissolved in a lower alcohol, wherein the crosslinking reaction is substantially suppressed by the lower alcohol;

(c) spreading the mixture of step (b) on a film; and

(d) thermally removing the lower alcohol and thereby crosslinking the polymer of ~~step (b)~~ (ii) with the one or more crosslinking agents of ~~(ii)~~ step (b) either simultaneously with or followed by laminating to a support, collectively thereby to form the medical patch.

Claim 29 (previously presented): The production process according to claim 27 or 28, wherein the copolymer contains N-vinyl-2-pyrrolidone as a monomer unit.

Claim 30 (previously presented): The production process according to claim 27 or 28, wherein the drug is a hormonal drug selected from estradiol or norethisterone acetate.

Claim 31 (previously presented): The production process according to claim 27 or 28, wherein the lower

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alcohol is methanol, ethanol, 1-propanol, 2-propanol or 1-butanol.

Claim 32 (previously presented): The medical patch according to claim 7, wherein the pressure sensitive adhesive shaped product contains substantially no water.

Claim 33 (previously presented): The medical patch according to claim 7, wherein the patch has the pressure-sensitive adhesive power of from 102 gF to 267 gF after storage at 65°C for 48 hours.